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VARIOUS.

Hints on Wood-Carving.*)

Tools used by carvers in wood are of various shapes and sizes, varying from one-sixteenth of an inch upwards according to the character of work to be executed. I have known some artists to have over 200 tools, and sometimes they have found it necessary to alter the shape of one or more tools to meet the exigencies of the work. These tools are called gouges, and for the most part are straight, like a cabinet-maker's chisel; some are bent at the cutting extremity, with a longer shank between the shoulder and the extreme edge. There is also what is known as a parting- or V-tool, varying in size and of great use to the carver, for by it, after the use of the pencil or crayon, he lays out the lines of his work with great facility. I have, while instructing others in this branch of art labour, invariably put this important tool first into the hand of the pupil, and by its use he more easily learns the manner of holding and guiding the other tools. In my estimation the proper mode of instruction to be pursued is to allow the novice to use a parting-tool of medium size; fasten a piece of straight-grained pine in the screw of the bench, let him draw with a pencil such lines as his fancy dictates, then let him follow these lines as best he can with the tool, and he will soon become accustomed to it, and find it fitting his hand with ease. In the use of all carver's tools both hands are in constant use. The right hand grasps the handle of the implement firmly yet easily, while the left hand guides it to its destined work. The guiding power comes from the wrist of the left hand. With the aid of a mallet, a parting-tool, and a few gouges I have seen artists produce exquisite work.

In sharpening tools the greatest care must be taken. It will be found necessary in most cases, particularly where hard wood is used, to sharpen the tool from both sides; by so doing greater strength is given to the edge, enabling it to cut without breaking, which is always a danger where hard wood is used. In preparing tools for pine or other soft wood, it will be found necessary to sharpen the tool from one side only, except to merely rub off the wire edge, and this is done by gently rubbing the oil slip on the inside of the gouge, while that side which is ground on the stone must have a longer bevel than ordinary, so as to cut the soft wood with ease. With these few hints and a little practice in the handling of the tools, the learner will soon become familiar with their use.

A bench is the next thing required, and it may be of any convenient length, about 4 ft. 6 in. long and about 2 ft. wide, the top to be a flat surface, and the height in accordance with the stature of the workman. In appearance a carver's bench is much like a cabinet-maker's bench, having a tail screw and iron dogs to hold the work firmly and solidly in its position. A moveable vice is requisite in many instances, and will be found necessary for certain classes of work, together with a mallet, rasps, files, &c. These make up a carver's outfit. All tools are laid on the bench, with the handles turned from the worker, which necessarily places the edge of the tool before the eye, and by this means the carver is enabled to select the required tool without delay.

In taking casts and impressions from figures, medals, leaves, &c., plaster of Paris is generally used. It is easily mixed with water, is so fine that it will take the most delicate impression, and it hardens quickly. It is fitted for the double purpose of making casts and moulds. The particular manner of making casts depends on the form of the subject. When there are no projecting parts, or such only as form a slight angle with the principal surface, it is simple and easy. But where parts project in sharp angles, or form curves inclined to the surface, the work is more difficult.

The first step to be taken is the forming of the mould. The original or model must first be well oiled and placed on a proper support. It must be covered with the soft and almost liquid plaster of Paris to a proper thickness, and this covering must be left to set firmly, so as to bear dividing without falling to pieces, or being liable to be put out of its form by slight violence. It must then be divided into pieces in order to easily come off from the model by cutting it with a knife or thin blade, and being divided it must be cautiously taken off and kept until dry. The art of properly dividing the moulds in order to separate them from the model requires some dexterity and skill in the art of casting and does not admit of rules. When the subject is of a round or spheroidal form, it is best to divide the mould into three or more parts, which will then come off in a very easy manner from the model, and the same operation holds good in any regular curved figure. The mould being thus made and allowed to dry, the parts must be put together after being well oiled and placed in position. The mixed plaster must then be poured into the opening left for such purpose, and allowed to set and dry. When taken out of the mould and repaired when found necessary the whole operation will be finished.

Platinum in the United States.

Notice was taken some time since of Mr. Edison's circular letter of inquiry with regard to the possible occurrence of platinum in various parts of the country. Mr. Edison informs us that, so far, he has received some three thousand replies. Instead of being an extremely rare metal, as hitherto supposed, platinum proves to be widely distributed, and to occur in considerable abundance.

Before Mr. Edison took the matter in hand platinum had been found in the United States in but two or three places — in California and in North Carolina — and in these places it occurred but sparingly. It is now found in Idaho, Dakota, Washington Territory, Oregon, California, Colorado, Arizona, New Mexico, and also in British Columbia.

It is found where gold occurs, and is a frequent residual of gold mining, especially placer mining. Mr. Edison thinks he can get 3,000 lb. a year from Chinese miners in one locality. One gravel heap is mentioned from which a million ounces of platinum are expected. Hitherto the product of the entire world would not suffice to supply electric lamps for New York city. Now Mr. Edison believes that our gold mines will supply more than will be required. The possible uses of this metal in the arts, however, are so numerous that there is no danger of an oversupply.

In addition to platinum Mr. Edison finds, among the large number of samples received daily, many other valuable metals and minerals, so that his researches in this direction are likely to result in increasing greatly the resources of our country in respect to the rarer and more costly minerals and metals.

Scientific American.

Elaborate Bronze Doors.

The grand portal of Strasburg Cathedral, according to the Paris papers, is at last finished. The two doors of bronze consist of 1500 pieces, 650 ornamental-headed nails, 300 rosettes, 98 large lozenge-shaped plates, 14 figure scenes, 14 half-lozenges with animals, 181 lozenges with plants, and foliage, and so forth. The subjects are all from sacred history.

The Furniture Gazette.

The Manufacture of Damascus Steel.

In a series of articles on mining and metallurgy at the Paris Exhibition is promulgated the following interesting data on the method of making Damascus steel sword blades at Zlatoust, in the Ural: The pig iron used in making the latter is a spiegel, with 8 per cent of manganese, which is partly converted into puddled steel and partly refined. The cast-steel ingots of about five pounds weight are made from selected qualities of puddled steel, 61 per cent of the crucible charge being hard, 23 per cent medium steel, 10.37 per cent refined pig iron, and 3.71 pure magnetic ore. The tilted bars are twice piled for shear-steel, a layer of sulphide of antimony being placed between the different bars. The final pile is made of four square bars, abouth one-eighth of an inch in the side.

Scientific American.

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*) By N. R. Harris, in the *Furniture Trade Journal.*